
SPARK Award Program in Stem Cell Biology for California High School Students

Grant Award Details

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Grant Type: SPARK

Grant Number: EDUC3-08387

Project Objective: The project objective is to manage the SPARK program that provides 8 week stem cell research internships for high school students. The Program Director was in charge of recruiting students from underprivileged communities, place these students in stem cell research labs at leading institutions in California, and train the students in stem cell science and research techniques. The PDs were also responsible for implementing the CIRM social media guidelines which included having students post pictures about their internship experience on Instagram and write a blog. They also had to coordinate a patient engagement activity where students get first hand experience with patients and what they go through. Lastly the PDs had to coordinate their students attendance at the 2016 SPARK conference, making sure that their poster presentations and speeches were prepared.

Investigator:

Name:	Paul Salvaterra
Institution:	City of Hope, Beckman Research Institute
Type:	PI

Award Value: \$309,576

Status: Active

Grant Application Details

Application Title: SPARK Award Program in Stem Cell Biology for California High School Students

Public Abstract:

We propose a CIRM SPARK Award program that builds on our existing summer research program for undergraduate and high school students by offering additional elements tailored to SPARK Award students, including: (a) a lecture series highlighting local investigators and ethical issues surrounding research on stem cells, (b) workshops to assist with their personal and professional development, (c) an introductory class on Stem Cells and their potential as therapeutics, (d) an opportunity to participate in donor recruitment activities in our blood, platelet and marrow donation group.

The CIRM SPARK Award program will allow promising students to participate directly with evidence-based stem cell research at an early time in their scientific development. The best way to learn about biomedical research is to actually do it. This early experience in authentic stem cell based biomedical research will not only broaden their general education in science but also serve to stimulate students to consider career opportunities in stem cell biomedicine. Nearly all of our previous CIRM Creativity Award students who are now applying or attending college have chosen to focus on scientific degree programs, many with an eye towards biomedical research careers. We believe that a new cohort of CIRM SPARK students will also be inspired and educated by our program. Even for the few who do not directly go into biomedicine, the knowledge they gain from our program in the ethics and therapeutic potential of stem cells will make them especially well informed citizens with a deep appreciation of the field. Some will perhaps become effective advocates for future stem cell based medical advances.

We encourage all stem cell researchers on campus to consider mentoring a SPARK student. We have a rich diversity of stem cell research on campus spanning the range from understanding and treating many types of cancer, diabetes and Alzheimer's disease. We are now organizing a Stem Cell Institute on campus to better coordinate current research programs and also to significantly expand efforts in stem cell based biomedicine. Unusually, we also encouraged non-traditional stem cell labs to consider either beginning a new stem cell project or initiating a collaboration in this area. Remarkably previous CIRM students even seemed to facilitate these efforts by "piloting" the science. We thus expect similar results with the SPARK program.

Statement of Benefit to California:

The mission of the CIRM SPARK Award program is to provide a research opportunity for California high school students in the fundamental biology of stem cells and their uses as therapeutics, and to provide an opportunity for mentored activities for their personal and professional development. This training will enhance stem cell-based biomedical research efforts, promote the development of novel therapies for previously intractable conditions, and give a new perspective on the contributions of stem cell research to the health of Californians. Can a bunch of high school students do all that? Most people would say no, but we directly experienced remarkable results with CIRM's Creativity Award Program. Naïve, somewhat awkward high school kids show up on the first day and by the end of their internship they become remarkably sophisticated scientists in training. This transformation happens for many reasons but chief among them are providing young people with the ability to actually do research and thus experience the thrill of discovery. This contrasts sharply with learning science only from books and lectures. The students are fully integrated into a functioning stem cell lab where all they have to do is open their eyes, roll up their sleeves and pitch in. We also provide a foundation so that all students can appreciate the pros and cons of various ethical points of view in using stem cells. Finally, our program will directly help patients by involving SPARK students in the collection of blood, platelets and marrow cells. We hope that by being involved in donor recruitment efforts students will obtain a deeper understanding of how these important medical gifts can be used to save lives. Students may then be encouraged to talk to their friends and family members about the importance of donating and thus leveraging this experience to benefit more Californians.

We share with CIRM a special emphasis on identifying and selecting underrepresented minority students or those from socio-economically disadvantaged backgrounds for our program. Diversity in the stem cell field is still a work in progress but will be important to ensure that the expected medical benefits of this exciting new science will be beneficial to of California's citizens. We use a selection process that emphasizes potential rather than student achievement to eliminate barriers of "access" and "connections" that are so often the limiting factor for talented underrepresented students to be included. In the past two years our underrepresented student cohort has increased from both categories from 16% to 48%, a percentage in line with California demographics. This will make it likely that future stem cell leaders in California will come from all walks of life.

Taken together we believe the CIRM SPARK Award program and the alumni it develops will go on to not only provide our state with a pool of well-informed citizens but also some potential future leaders in stem cell biomedicine.

Source URL: <https://www.cirm.ca.gov/our-progress/awards/spark-award-program-stem-cell-biology-california-high-school-students>